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The Committee on Drug Addiction and Narcotics

NATHAN B. EDDY

Secretary, Committee on Drug Addiction and Narcotics

DESERVEDLY or not, the United States among western nations has long had the reputation of being most seriously afflicted with drug addiction. Certainly it has been acutely conscious of addiction problems and has been a leader in the instigation and enforcement of national and international control measures. However, control attacks in general only one aspect of the addiction problem, abuse of narcotic drugs. Fortunately this country has not been satisfied with control alone; for more than three decades we have been expending a great deal of effort towards a better understanding of addiction, its nature and causes, its treatment and prevention. A Committee on Drug Addiction to sponsor and coordinate these efforts has been in existence since 1921, and this year the Academy-Research Council completes a quarter century of activity in this field.

The first Committee was organized under the chairmanship of Katherine Bement Davis, general secretary of the Bureau of Social Hygiene, Inc., of New York City. Proceeding from a realization of the differences of opinion and of the confusion existing at that time even in the minds of those dealing officially, professionally, or otherwise, with the addiction problem, the Com-

mittee sought to determine the extent of the problem, the etiology and nature of addiction, and how the problem might best be solved. A major product of its work was the preparation and publication under its auspices of the book, *The Opium Problem*, (1928) by Charles E. Terry and Mildred Pellens. The Committee also supported fundamental research on the pharmacological action of morphine and related substances.

After several years' experience with these problems, the Bureau of Social Hygiene concluded that the Academy-Research Council was better equipped to coordinate the diverse interests involved, and requested the Division of Medical Sciences to undertake the direction of the program. In 1929 the first Committee terminated its activities and turned over to the Research Council its responsibilities and the funds remaining from those allocated to it by the Bureau. The Research Council organized a new Committee on Drug Addiction with William Charles White as chairman. It brought together representatives of the U. S. Bureau of Narcotics, the U. S. Public Health Service, and various universities, combining the viewpoints of those concerned with the control, chemical, pharmacological, clinical,

and psychiatric aspects of the total problem.

The objectives of the new Committee, as stated in its first report in April 1930, were to reduce the legitimate uses of addiction-producing drugs, to find nonaddicting substitutes which would be capable of effecting the same medicinal action, and in this way to reduce to a minimum the legitimate production of opium alkaloids and to lessen the problem of police authority necessary to control the situation.

These are ideals as well as objectives, and are still far from fulfillment. However, the Committee at the outset evolved a program which still seems to offer the best chance of progress. This has four aspects:

1) Educational—to prepare, for general educational purposes by the lay and scientific press, articles on the indispensable uses of morphine and related alkaloids;

2) Chemical—to seek to prepare, by transformations and synthesis, compounds with less or no addiction liability that would otherwise act like morphine in medical practice;

3) Pharmacological—to study the effects in animals of compounds thus obtained; and

4) Clinical—to test the value of these compounds as replacement substances in human therapy.

Possibly there has not been a sufficiently powerful continuing drive behind the educational part of the plan since it seems to have been largely disregarded and not to have borne the fruit that it might. Nevertheless, clinical observations have demonstrated that smaller doses than are usually employed of codeine for cough and of morphine for pain suffice for most cases. Also it has been emphasized and needs to be reiterated again and again that the same caution is needed in the use of new analgesic drugs as in the use of morphine.

The chemical and pharmacological portions of the plan were carried out at the Universities of Virginia and Michigan, respectively, and both institutions cooperated and contributed in many ways to the success of the plan. The systematic scientific program in these two fields resulted in the accumulation of much affirmative data on two major problems—the quantitative dissociation of components of the complex

morphine effect on the living organism by chemical modification of the morphine molecule, and the development of compounds with definite analgesic action by suitable chemical additions to simple nuclei.

In addition to the original investigative work, the Committee had prepared two complete reviews of the chemical and pharmacological literature in this field: *The Chemistry of the Opium Alkaloids*, by Lyndon F. Small and Robert E. Lutz, and *The Pharmacology of the Opium Alkaloids*, by Hugo Kruegar, Nathan B. Eddy, and Margaret Sumwalt. A third volume, *Studies on Drug Addiction*, by Lyndon F. Small, Nathan B. Eddy, Erich Mosettig, and C. K. Himmelsback, reviewed the work sponsored by the Committee through 1938 with reference to chemical studies of opium alkaloid derivatives and allied synthetic substances and their physiological action.

The Committee operated until June 30, 1939, on the funds originally transferred to the Academy-Research Council from the Bureau of Social Hygiene and on grants from the Rockefeller Foundation. Its budget was about \$50,000 a year. In 1939 the investigative work of the Committee was taken over by the National Institutes of Health, but the Committee was continued as a small advisory body to insure continuity in the pursuit of the original objectives.

Of the many compounds which were made and tested in the Committee's program from 1929 to 1939, one, methyldihydromorphinone (Metopon), stood out as having definite practical advantages. The difficulty of production and poor yield of this compound had militated against exploitation of these advantages. The Committee, nevertheless, repeatedly was confronted with requests for assistance in difficult cases where patients with chronic pain were unable to get satisfactory relief because of morphine's side reactions. Metopon was again and again successfully employed to meet this need.

In 1946, the Chairman called a meeting to review the evidence accumulated from these numerous but scattered sources. There were present besides the members of the Committee representatives of the

Federal Security Agency, the U. S. Food and Drug Administration, the American Drug Manufacturers Association, the American Pharmaceutical Manufacturers Association, and the three morphine manufacturing firms. This group evolved a plan of generous cooperation for limited manufacture and marketing of Metopon. Beginning in May 1947, the Committee rigidly controlled this program for one year, defraying its expenses with funds supplied by the American Cancer Society and by Parke, Davis, & Co. and Sharp & Dohme, Inc. During that time the drug was administered to nearly 6,000 cancer patients. The conclusion of the Committee was that "Metopon hydrochloride is an effective oral analgesic for chronic pain, the use of which is attended by a high incidence of mental clarity and a low incidence of side reactions. Tolerance to Metopon develops more slowly than tolerance to morphine."

Meanwhile, information about methadone and related substances came to this country as a result of post-war investigation of German chemical industries. This was an event of the greatest importance and tremendously stimulated interest in synthetic analgesics. The Committee held many conferences in the development of the work on methadone. It put forth every effort to safeguard the medical profession and the public in the introduction of this powerful new agent and warned repeatedly of the necessity for the same caution in its use as that afforded morphine so that abuse of the drug might be minimized.

In August 1947, the Committee suffered the grave loss by death of its chairman, Dr. White. Fortunately, under his years of leadership the role of the Committee and a pattern of cooperation in the field of narcotics had become firmly established, but widening interest in drug addiction and the rapid development of synthetic narcotics suggested the desirability of reorganization and expansion.

The Research Council accordingly called together in October 1947 a new Committee on Drug Addiction and Narcotics consisting of Isaac Starr, Research Professor of Therapeutics, University of Pennsylvania, *Chairman*; Nathan B. Eddy, Chief of

the Section on Analgesics, National Institute of Arthritis and Metabolic Diseases, *Secretary*; The Honorable H. J. Anslinger, U. S. Commissioner of Narcotics; Raymond N. Bieter, Professor of Pharmacology, University of Minnesota; Dale C. Cameron, Clinical Professor of Psychiatry and Neurology, University of Minnesota; Erwin E. Nelson, Director of the Department of Pharmacology, St. Louis University School of Medicine; W. W. Palmer, Public Health Research Institute of the City of New York; M. H. Seevers, Professor of Pharmacology, University of Michigan; and Lyndon F. Small, Chief of the Laboratory of Chemistry, National Institute of Arthritis and Metabolic Diseases. The personnel of the Committee is the same today except that Dr. Joseph M. Hayman, Jr., Dean and Professor of Medicine of the Tufts College Medical School, has replaced Dr. Palmer, deceased.

This Committee took over the responsibilities and objectives of the original Research Council drug addiction committee and, as its name implies, has assumed other functions as well. The Committee holds a regular annual meeting in January and has usually held an interim meeting in June or early fall. Its fourteenth meeting was held on October 1 and 2 of this year.

The Committee's functions include service in an advisory capacity to the Armed Services and the U. S. Veterans Administration on all problems relating to narcotic drugs, including new research projects; consideration of new analgesic compounds with a view to recommendation concerning determination of their addiction liability, and eventual recommendation on this point to the Federal Bureau of Narcotics and the Food and Drug Administration; and consideration and possible support of new research on analgesia, analgesic drugs, and addiction. The Committee, in other words, considers its function to be cooperation with Government agencies, with industry, and others in any way possible in the field of analgesics and addiction.

Very early the Committee began to evolve a new pattern of cooperation with industry. Feeling that there were basic research projects in its field of broad general interest which were not initiated because no one in-

stitution or organization would assume sole support, the Committee recommended setting up a research fund to be administered by it for the support of such projects and invited contributions from those industries interested in narcotics and analgesics. The response on the part of industry was satisfactory; contributions to the fund have amounted to twenty-five or thirty thousand dollars a year, and there are now twenty contributing firms. The Committee has been able to support two basic projects since 1950. One is the determination of a regimen for evaluation of addiction liability using the monkey as the test subject, the other is a controlled evaluation of clinical analgesia and side action incidence with new agents and the influence thereon of many factors.

Feeling also that early dissemination and discussion of developments in its field of interest was desirable, the Committee for several years has begun each of its meetings with an open session to which representatives of those firms known to be interested in analgesics and narcotics are invited and before which are presented not only reports on the projects which the Committee sup-

ports but also discussions by others working on various aspects of analgesia, analgesic agents, and addiction. These open sessions have been most enthusiastically received and are being attended by about fifty representatives of more than thirty industrial firms. Recently the Committee has been holding its meetings at research centers where work in its field of interest is going on, including industrial, governmental, and university laboratories.

To sum up then, the Committee on Drug Addiction and Narcotics continues to serve in an advisory capacity the Armed Services and other Government agencies, industry, and others on problems relating to analgesics, narcotics, and addiction; it welcomes early information on new agents in this field; it makes recommendations on the desirability of testing for addiction liability and for clinical value; it makes recommendations with respect to those substances shown to have addiction liability; it supervises and supports basic research on analgesics and addiction; and in many ways it is a clearinghouse for information in its field of interest.

The International Geophysical Year A Progress Report

JOSEPH KAPLAN, *Chairman*, and ALAN H. SHAPLEY, *Vice-Chairman*

United States National Committee, International Geophysical Year

THREE earlier articles, two in *NEWS REPORT* and one in *Science* described the United States program for the International Geophysical Year (IGY).¹ Since then further developments have occurred, and these will be described here. Particular emphasis will be placed on the meeting in Rome of the Special Committee for the International Geophysical Year (CSAGI) of the Inter-

national Council of Scientific Unions held September 30–October 4, 1954.

Among some of the principal activities of the United States National Committee and its program coordination group have been the following:

1) Preparation of the United States National Committee report to CSAGI for consideration in Rome. This involved the presentation of the character and location of the observations to be made during the IGY. This report was the working paper which was designed to let the other participating

¹ JOSEPH KAPLAN, "The International Geophysical Year, 1957–58," *News Report* 3: 89–92, 1953; IDEM, "The United States Program for the International Geophysical Year," *News Report* 4: 17–19, 1954; and IDEM, "The International Geophysical Year Program," *Science* 119: 437, 1954.

countries know what the United States was prepared to do and where the observations would be made.

2) Participation in a symposium on the scientific aspects of the IGY held at the National Academy of Sciences on the occasion of its annual meeting in April of this year. This symposium, presided over by Lloyd V. Berkner, Vice-Chairman of CSAGI, has now appeared in the *Proceedings* of the National Academy of Sciences, Vol. 40, No. 10, pp. 922-982. Edwin B. Wilson, Editor of the *Proceedings*, provided invaluable help and advice in the preparation of the manuscripts.

3) Presentation of the IGY budget to the U. S. Bureau of the Budget and later in the budget hearings which were held by the appropriate committees of the United States House of Representatives and the United States Senate. Those taking part in these presentations included Detlev W. Bronk, President of the National Academy of Sciences; Alan T. Waterman, Director of the National Science Foundation; Laurence M. Gould, member of the National Science Board; Wilson F. Harwood, Assistant Director for Administration, National Science Foundation; Hugh Odishaw, Administrative Secretary of the United States National Committee; Lloyd V. Berkner; and Joseph Kaplan. In July the Congress appropriated two million dollars to be used during fiscal year 1955 to purchase some of the scientific equipment needed for the geophysical year and to assist the United States National Committee and the National Science Foundation in preparing the United States participation in the scientific program to begin in 1957. A request for the balance needed to carry through the United States portion of the international effort will be submitted to Congress within the next few months.

The meetings of CSAGI in Rome from September 30 to October 4 were the culmination of a series of intensive reviews of the various national plans for the IGY. These reviews began with the meeting of the Mixed Commission on the Ionosphere in Brussels. They were continued at the General Assembly of the International Scientific Radio Union in the Hague and, following this, at a conference on ionospheric physics

held in Cambridge and sponsored by the Physical Society of London. Further consideration was given to the program at the Tenth General Assembly of the International Union of Geodesy and Geophysics in Rome and at a two-day special meeting of the Union's Committee for the IGY. Possibly never in history were national plans subjected to closer study, discussion, and international coordination than were those made for the IGY. It is with considerable pride that we can report that the United States program survived this examination well. The United States program, as described in previous articles, will require only minor modifications.

The official representatives of the United States National Committee and many other United States participants in the six conferences referred to above contributed appreciably and significantly to these meetings. One should also include the meeting last summer of the International Union of Pure and Applied Physics at which special consideration was given to the cosmic ray program in the IGY.

We now wish to report on some of the highlights of the Rome meeting of CSAGI. Here 13 working groups appointed for the purpose at the meeting prepared reports, recommendations, and resolutions which in effect now make up the agreed-upon world program for the IGY. These working groups dealt with the following: world days, meteorology, geomagnetism, aurora and airglow, ionosphere, solar activity, cosmic rays, longitude and latitude, glaciology, oceanography, publications and publicity, rockets, and regional reports. The working group on regional reports considered three regions and three pole-to-pole meridional lines as follows: the Antarctic, Arctic, Equatorial, 80°/70° west meridian line, 10° east meridian line, and the 140° east meridian line.

Perhaps, because of the increasing national and international interests in the Antarctic region, a summary of the CSAGI report on this area may be worth more than a passing mention. A total of 21 stations are either already planned or in operation for geophysical research in the Antarctic during the IGY. This imposing effort represents the first really thorough world plan to

uncover the geophysical secrets of this great continent and is an appropriate consequence of the individual efforts of great Antarctic explorers of the past who laid the foundation on which the IGY program rests.

Of the 21 stations now planned or already in operation, 11 are on the continent proper or below the Antarctic Circle, and 10 are on islands surrounding the continent and properly in its sphere of influence. CSAGI recommended five additional stations on the continent proper and three additional ones on surrounding islands to complete the Antarctic network.

The conduct of geographical research in Antarctica is significant for many reasons. Antarctica, one of the earth's continents, represents a major land mass with an area of about 6,000,000 square miles. It lies almost entirely within the Antarctic Circle and by virtue of its unique position and its physical characteristics represents a region of almost unparalleled interest to the fields of geophysics and geography alike.

In geophysics Antarctica has many significant, unexplored aspects: for example, the influence of this large ice mass on global weather; the influence of the ice mass on atmospheric and oceanographic dynamics; the nature and extent of aurora australis (though the aurora borealis has received considerable attention in recent years, the detailed characteristics of Antarctic aurora remains largely unknown); and the possibility of conducting unique ionospheric experiments northward from the South Polar Plateau during the long total-night season to determine the physical characteristics of the ionosphere during prolonged absence of sunlight. These and similar scientific considerations led to the recognition by CSAGI that Antarctica represents a most significant portion of the earth for intensive study during the IGY.

Because the establishment of bases in Antarctica involves considerable effort, the program recommended by CSAGI calls for the minimum number of stations needed to obtain adequate coverage of the region. Here the following considerations are pertinent: 1) adequate coverage along the three meridional pole-to-pole lines is necessary; 2) adequate coverage about the con-

tinent of Antarctica, and 3) representative coverage in the interior of the continent, including the South Polar Plateau. For obvious scientific reasons, and in view of the fact that the incremental effort to include additional fields of technical interest becomes easier once a station has been established, CSAGI recommended that a majority of Antarctic stations assume responsibilities as primary observatories for all fields of interest, namely: meteorology, geomagnetism, aurora and airglow, ionospheric physics, glaciology, cosmic rays, oceanography, seismology, and gravity measurements. It was agreed that certain stations would limit observations to a few fields, namely: meteorology, aurora and airglow, geomagnetism, and ionospheric physics.

Because studies of cosmic rays have not, until recently, made significant contributions to the development of geophysics and solar physics, we would like to call special attention to its proposed role during the IGY. Cosmic ray research offers the promise of being able to investigate phenomena inaccessible to any other experimental discipline in solar physics or in geophysics. It may well be that the coming IGY will provide an impetus for cosmic ray research in this field which will parallel the dramatic development of ionospheric research following the last Polar Year.

The IGY is important for the development of this field of cosmic ray research for two reasons. First, it will lead to the worldwide distribution of standardized detecting apparatus. Second, but more important, there will be available to the research scientist an unprecedented array of solar and geophysical data, enabling him to develop sound physical concepts of the electromagnetic system of the sun, earth, and interplanetary space.

Among the CSAGI resolutions relative to the cosmic ray program was a recommendation that national governments could help materially in the work of the scientists by establishing service organizations to cover three different types of facilities: 1) balloon launching sites and arrangements, 2) rocket launching sites, and 3) establishment and maintenance of mountain stations.

An interesting development which was reported to the CSAGI during its Rome meeting was the French plan to carry out a dozen soundings with the Veronique, which is a large rocket capable of going into the E-region of the ionosphere. It was learned that both Britain and Australia are considering plans for a rocket program during the IGY, and it was apparent that the success of the past United States effort, and the relatively extensive United States plans for the use of small and large rockets during the IGY, were responsible in part for this gratifying expansion of interest.

It was interesting, too, that the CSAGI resolutions on extending the rocket program for the IGY specifically mentioned the value of expanding the United States effort; and CSAGI urged that as many countries as possible undertake programs of small-rocket sounding, since this is considered essential

to adequate temporal and geographic coverage of the important fields which make up the small-rocket program. It was pointed out that a small-rocket program can be carried out inexpensively and would enable experimenters to send equipment to as high as 80 kilometers.

The increased participation in the planning of the actual details of the IGY program made possible by this series of intensive meetings served primarily to weld the individual national plans into a real worldwide program. Ideas and criticisms were freely exchanged in an atmosphere of friendly cooperation which may well be the pattern for similar enterprises in the future. Perhaps these demonstrations of international cooperation in science will turn out to be as important among the results of the IGY as the geophysical data and knowledge which we hope to obtain.

SCIENCE NEWS

AUTUMN MEETING NATIONAL ACADEMY OF SCIENCES

Approximately 120 members of the National Academy of Sciences attended the autumn meeting held at Columbia University in New York City, November 8-10. As part of the celebration of its bicentennial year, Columbia University had invited the Academy to hold the fall meeting on its campus.

The Council of the Academy met on Sunday afternoon, November 7, and the scientific sessions began the following morning and continued through Wednesday afternoon. The program included eight sessions for the presentation of scientific papers. Abstracts of these papers were printed in *Science*, Vol. 120, pp. 775-791. Many of the papers will be published in full in subsequent issues of the *Proceedings* of the Academy.

On Monday afternoon Academy members met in business session to receive reports and to review actions taken by the Council since the annual meeting in April. Presi-

dent Bronk reported on the major activities of the Academy-Research Council during the last six months, touching particularly on the Oceanographic Convocation at Woods Hole, Mass., in June; the recent progress in planning for the International Geophysical Year; the visit of Seiji Kaya, President of the Science Council of Japan, as a guest of the Academy in September; new programs of fellowships in physiological psychology and of research associate-ships in mathematical and physical sciences; and the advisory services to the Federal Civil Defense Administration, the U. S. Weather Bureau, the Atomic Energy Commission, and the U. S. Departments of State, Treasury, and Army.

Monday evening, Theodosius Dobzhansky of Columbia University delivered the public lecture which is a regular feature of the program for the Academy meetings. In 1941 Professor Dobzhansky was awarded the Daniel Giraud Elliot Medal by the Academy for his work in zoology. Widely known for his work in genetics, he spoke

on "The Unique Aspects of Human Evolution." Before the lecture, members of the Academy and their guests were received by President and Mrs. Kirk at the President's House on Morningside Drive.

Tuesday evening Academy members and their guests assembled at the Men's Faculty Club for the Academy dinner and the preceding reception given by President and Mrs. Bronk. The dinner was one of the highlights of the three-day meeting. Seated at the head table with the officers of the Academy were John Cullen Krout, Provost of Columbia University; Sir Francis Simon, Fellow of the Royal Society; Niels Bohr, President of the Royal Danish Academy of Sciences; Henry Allen Moe, Secretary-General of the John Simon Guggenheim Memorial Foundation; and A. N. Richards, past President of the National Academy of Sciences.

Following dinner, Sir Francis and Professor Bohr presented greetings from the Royal Society and the Danish Academy respectively. Dr. Krout then spoke on the theme of Columbia's bicentennial year, "Man's right to knowledge and the free use thereof." He discussed the liberty of the individual and the question, "How far shall we go in permitting mass opinion to limit the freedom of the individual?" The closing address was given by Dr. Moe, who described the scope and policies of the John Simon Guggenheim Memorial Foundation which he has served for thirty years as Secretary-General. He reminded his audience that the Foundation has no program of its own but, instead, exists solely to help individual scholars of the highest competence to do what they want to do. He believed that the Foundation's ability to help would increase in the years ahead.

As host to the Academy, Columbia University not only provided facilities for the scientific program, but planned many special events to make the occasion of the autumn meeting a pleasant one. A special program for the ladies was arranged under the chairmanship of Mrs. I. I. Rabi. This program included a tour of the United Nations buildings, an excursion to the New York Botanical Gardens as guests of Professor and Mrs. William J. Robbins, and a

visit to the Lamont Geological Observatory at Palisades under the guidance of Mrs. W. Maurice Ewing. The happy combination of professional activities and social affairs so graciously provided set a standard which will be hard to equal.

AWARD OF THE DANIEL GIRAUD ELLIOT MEDAL

The National Academy of Sciences at its autumn meeting, held at Columbia University, November 8-10, voted to award the Daniel Giraud Elliot Medal for the year 1951 to Libbie Henrietta Hyman of the American Museum of Natural History. The presentation of the medal and accompanying honorarium will be made at the ninety-second annual meeting of the Academy, April 25-27, 1955.

The Daniel Giraud Elliot Medal is awarded annually in recognition of meritorious work in zoology or paleontology. Dr. Hyman won the award for her comprehensive treatise on *The Invertebrates*, in process of publication by the McGraw-Hill Book Company. The recommendation of the committee on the Elliot Fund read in part as follows: "The carefully prepared text, a concise summary of the characters and relationships of lower animal groups concerning which there has been much confusion, is based on personal studies of the author and a careful summary of the literature. The result is a clarification of confusion and difficulty in previous understanding that is of major assistance not only to those in the technical zoological field, but also to teachers, and to research workers concerned with medical matters."

ACADEMY-RESEARCH COUNCIL LECTURE SERIES

The National Academy of Sciences-National Research Council has resumed the lecture series presented in previous years. Plans are being formulated again to present distinguished scientists from abroad and within the United States. On Tuesday, November 16, John Turton Randall, Wheatstone Professor of Physics at King's College in the University of London and Honorary Director of the Medical Research Council Biophysics Research Unit, delivered the

opening address entitled "Interference Microscopy in Biology." An informal reception at which tea was served followed the lecture.

The second lecture will be given by Joel H. Hildebrand, Professor Emeritus of the University of California and President-elect of the American Chemical Society, on Tuesday, December 7. Dr. Hildebrand will speak on "Acids and Bases."

CONFERENCE ON ELECTRICAL INSULATION

The twenty-third annual meeting of the Conference on Electrical Insulation was held at Pocono Manor Inn, Pocono Manor, Pa., October 18-20, with about 250 technical registrants in attendance. David A. McLean of the Bell Telephone Laboratories, Inc., served as chairman of the Conference.

The research papers presented in the technical sessions on October 18 and 19 were grouped under the following main subjects: deterioration and breakdown, ferroelectrics and ferromagnetics, dielectric measurement methods, general and theoretical, and materials and applications. Each day following the technical sessions, the Conference divided into smaller groups for round table discussions on predetermined topics of further interest. At the banquet on Tuesday evening, October 19, the Conference was entertained and instructed by J. R. Pierce, Director of Electronics Research of the Bell Telephone Laboratories, Inc., who spoke on "Some Aspects of Space Travel." Dr. Pierce under a pen name is a well-known writer of science fiction.

At the business meeting of the Conference held on October 19, the following officers were nominated for 1954-55: Robert G. Breckenridge, National Bureau of Standards, *Chairman*; A. H. Sharbaugh, General Electric Research Laboratories, *Vice Chairman*; and T. W. Dakin, Westinghouse Electric & Manufacturing Co., *Secretary*. Pocono Manor Inn was selected again for the next Conference to be held October 17-19, 1955.

Summaries of the papers presented in the technical sessions will be published in the Annual Report of the Conference.

BUILDING RESEARCH INSTITUTE

The Building Research Institute whose primary purpose is to promote the advancement of building technology by bringing together those engaged in improving the design and construction of buildings has been steadily increasing its membership. Corporations, partnerships, individuals, and business and professional associations and societies who are qualified by their interest in the progress of building research and in the application of research results may become members. The Institute is pleased to announce the addition of the following new members since September 1:

AMERICAN INSTITUTE OF ARCHITECTS
JAMES ARKIN, Architect, Chicago, Ill.
The AUSTIN COMPANY, Cleveland, Ohio
BETTINGER CORPORATION, Boston, Mass.
BOLT, BERANEK & NEWMAN, Boston, Mass.
The BURGESS-MANNING COMPANY, Chicago, Ill.
The DAVIDSON ENAMEL PRODUCTS, INC., Lima, Ohio
The DOW CHEMICAL COMPANY, Midland, Mich.
GIFFELS & VALLET, INC., Detroit, Mich.
HAROLD D. HAUF, Rensselaer Polytechnic Institute
KAISER ALUMINUM AND CHEMICAL CORPORATION, Oakland, Calif.
TED LARSON, University of Michigan
MILLS COMPANY, Cleveland, Ohio
RADIO CORPORATION OF AMERICA, FACILITIES ADMINISTRATION, Camden, N. J.
REMINGTON ARMS COMPANY, Bridgeport, Conn.
RICHARDS-WILCOX MANUFACTURING COMPANY, Aurora, Ill.
RUSSELL REINFORCED PLASTICS CORPORATION, Lindenhurst, N. Y.
C. W. SMITH, Southwest Research Institute
SYSKA AND HENNESSY, INC., Consulting Engineers, New York City
TILE COUNCIL RESEARCH CENTER, New Brunswick, N. J.
WEYERHAEUSER SALES COMPANY, St. Paul, Minn.
WHEELING CORRUGATING COMPANY, Wheeling, W. Va.

PLASTICS IN BUILDING CONFERENCE

The Conference on Plastics in Building, sponsored by the Building Research Advisory Board, the Society of the Plastics Industry, Inc., and the Manufacturing Chemists' Association, Inc., was held on October 27 and 28 at the United States Chamber of Commerce. This was the second building conference arranged and conducted by the Building Research Institute to bring together technical people from all sectors of the building industry to dis-

cuss the applications of a specific material in building, in this instance plastic.

H. N. Huntzicker, a member of the Building Research Institute and Vice President in charge of research of the United States Gypsum Company, served as Chairman of the Conference. Topics discussed included specific uses, standards and codes, and future uses of plastics in building. The program was planned so that most of the papers were presented by plastics industry people and most of the discussion periods were led by building industry people for the express purpose of developing the questions about plastics for which the building industry wanted answers.

CONFERENCE ON RADIOCARBON DATING

A conference on the dating of Late Pleistocene and Recent events by the use of radioactive carbon (C_{14}) was held at Phillips Academy, Andover, Mass., on October 21-23. Originally proposed and planned by the Divisions of Earth Sciences and of Anthropology and Psychology jointly, the conference was made possible by a grant from the National Science Foundation to the Robert S. Peabody Foundation for Archeology, which was host to the participants. Frederick Johnson, Curator of the Peabody Foundation and a former member of the Division of Anthropology and Psychology, was chairman of the conference. Among the 37 specialists attending the conference were physicists, chemists, archeologists, anthropologists, paleontologists, and geologists.

The conference dealt chiefly with the status of the C_{14} method today. The laboratory workers outlined the recent developments in their techniques and discussed the needs for further work in perfecting their methods. The geologists and archeologists debated the application of the dating method to field studies and indicated those areas where carbon dates have given good results and where there seems to be discrepancy between carbon dates and dates derived by other methods. The discussions were highly productive and there was a general feeling that the conference had achieved its objective.

CONFERENCE ON CLAY MINERALS

The Third National Conference on Clay Minerals was held at the Rice Institute in Houston, Tex., on October 27-29. This annual conference, organized by the interdivisional Committee on Clay Minerals and partly financed by contributions from industrial supporters, has as its chief aim the bringing together of workers from all of the various scientific disciplines that deal with clay minerals. The Houston meeting was attended by more than 200 people, including specialists in X-ray crystallography, electron microscopy, and industrial applications. Thought provoking papers and lively discussions made this conference a most valuable one.

W. O. Milligan of the Rice Institute will edit the papers presented at the conference, and the volume will be published by the Academy-Research Council.

AMERICAN GEOLOGICAL INSTITUTE

The Board of Directors and Executive Committee of the American Geological Institute met in Los Angeles on October 31, prior to the meetings of the Geological Society of America and other societies affiliated with the Institute. The following officers were elected for the coming year: E. A. Eckhardt, Gulf Research and Development Company, *President*; M. M. Leighton, former Director of the Illinois State Geological Survey, *Vice-President*; and H. R. Joesting, U. S. Geological Survey, *Secretary-Treasurer*. C. R. Longwell, who served as President of the Institute last year, will continue to serve on the Executive Committee as past President, and R. J. Russell, Louisiana State University, will continue as the National Research Council representative.

GRANTS-IN-AID FOR SPECIALIZED MEDICAL RESEARCH

The Division of Medical Sciences will award for the academic year 1955-56 a limited number of grants-in-aid in support of research on the following specialized problems:

1) Physiological, biochemical and pharmacological effects of alcohol. Applications should be sent to the Committee on Prob-

lems in Alcohol and should be postmarked not later than January 15, 1955.

2) Mechanisms controlling sexual behavior in animals and man (may include endocrinological, neurological, psychological, anthropological, phylogenetic, and genetic studies directed towards this problem). Applications should be sent to the Committee for Research in Problems of Sex and should be postmarked not later than February 15, 1955.

Further details and application blanks may be obtained from the appropriate committees of the Division of Medical Sciences.

FOREIGN RESEARCH SCIENTISTS PROGRAM

The Foreign Operations Administration has extended the program for Foreign Research Scientists (*see* NEWS REPORT, Vol. III, No. 6, pp. 85-87) which was formerly restricted to 150 candidates to a total of 185. This additional program will be administered by the National Academy of Sciences under the same conditions as those which governed the previous program. The European academies have been asked to present applicants as before for review and subsequent placement in American laboratories. These applications may be expected to arrive early in 1955.

The following awards under this program have been made since our last report:

From Belgium

Daniel Bermane, Electrochemistry—Massachusetts Institute of Technology, with H. H. Uhlig.

From France

Michel Angot, Oceanography—Scripps Institution of Oceanography, with Roger Revelle.

Ewald Gondolf, Physics—Carnegie Institute of Technology, with Robert F. Mehl.

Christian Wagner, Physics—Massachusetts Institute of Technology, with B. E. Warren.

From Germany

Walter Braun, Pharmacology—University of Cincinnati, with William D. Lotspeich.

Clemens-August Hackethal, Physiological chemistry—The Boston Dispensary of the New England Medical Center, with Gerhard Schmidt.

Walter Harm, Genetics—California Institute of Technology, with Max Delbrück.

Lothar Jaenicke, Biochemistry—Western Reserve University, with G. Robert Breenberg.

Erich Kessler, Plant physiology—University of Chicago, with Hans Gaffron.

Wolfram Keup, Biochemistry—New York State Psychiatric Institute, with Heinrich Waelsch.

Martin Klingenberg, Biochemistry—University of Pennsylvania, with Britton Chance.

Rüdiger Knapp, Botany—California Institute of Technology, with F. W. Went.

Erwin Kreyszig, Mathematics—Stanford University, with Stefan Bergman.

Klaus J. Müller, Paleontology—State University of Iowa, with A. K. Miller.

Wolfgang Trautwein, Physiology—Johns Hopkins Medical School, with Stephen Kuffler.

Gustav Weber, Nuclear Physics—California Institute of Technology, with Charles H. Lauritsen.

From Italy

Dino Dini, Jet propulsion and rockets—California Institute of Technology with H. S. Tsien.

Giovanni de Franciscis, Animal husbandry—Agricultural and Mechanical College of Texas, with H. O. Kunkel.

Alberto Girelli, Petroleum chemistry—Bureau of Mines, U. S. Department of the Interior, with John S. Ball.

From Portugal

Pedro Braumann, Mathematics—Stanford University, with M. A. Girshick.

José Cardoso, Soil genesis—Iowa State College, with Frank F. Riecken.

Antonio da Costa, Fisheries—School of Fisheries, University of Washington.

Ramiro Ferrão, Animal feeding and meat technology—Agricultural and Mechanical College of Texas, with J. C. Miller.

Antonio Montano, Veterinary pathology—Agricultural and Mechanical College of Texas, with Hilton A. Smith.

José Pinto Peixoto, Meteorology—Massachusetts Institute of Technology, with H. G. Houghton.

From the United Kingdom

Geoffrey V. Chester, Physics—Yale University, with John G. Kirkwood.

Richard Gibbons, Biochemistry—Ohio State University, with M. L. Wolfrom.

Charles G. James, Physical Chemistry—University of California, Berkeley, with Leo Brewer.

Ian M. Mills, Infrared spectroscopy—University of Minnesota, with Bryce Crawford, Jr.

Gordon Squires, Physics—Institute for Advanced Study, with Robert Oppenheimer, and University of Chicago, with John and Leona Marshall.

CONFERENCE ON INTERNATIONAL EXCHANGE OF SCHOLARS

At the request of the Board of Foreign Scholarships, the Committee on International Exchange of Persons is sponsoring a conference on the international exchange of scholars at Princeton, N. J., on December 2-4. The conference, financed by a grant from the Ford Foundation, will center

its attention on the exchange of highly specialized scientific and scholarly persons (*see* NEWS REPORT, Vol. IV, No. 4, pp. 68-69).

Preliminary staff studies have been in preparation for the past several months under the guidance of planning committees appointed by the Committee on International Exchange of Persons. Robert Strozier of the University of Chicago is directing arrangements for the conference, and William Birenbaum of the same university is serving as Executive Secretary.

Approximately sixty persons professionally concerned with international exchange problems will attend. The three major phases of the subject to be discussed are: 1) the character of the flow of exchanges and of the structure involved; 2) the purposes of the exchange programs and their evaluation; and 3) long-range planning and policy formulation.

ANNUAL MEETING AGRICULTURAL RESEARCH INSTITUTE

The third annual meeting of the Agricultural Research Institute (ARI) was held on October 4 and 5 at the Academy-Research Council building with about one hundred representatives of industry, State experiment stations, Federal agencies, and scientific societies in attendance. The Agricultural Board met jointly with ARI.

On Monday morning, October 4, industry's stake in agricultural research was discussed by C. L. Oheim, Vice President of John Deere and Company. The role of Federal and State institutions in ARI was discussed by W. M. Fifield, Director of the Florida State Agricultural Experiment Station, while E. C. Stakman of the University of Minnesota discussed the work of the National Science Foundation. The Monday afternoon program was devoted to a discussion of the activities of the Agricultural Board and the report of the Projects and proposals Committee of ARI. Homer Brinkley, Executive Vice President of the National Council of Farm Cooperatives, addressed the dinner meeting held on Monday evening, October 5.

An address by J. G. Harrar of the Rockefeller Foundation on international collaboration in food production and a panel dis-

cussion on industry-Government relations in agricultural research comprised the program for Tuesday morning. E. C. Elting from the U. S. Office of Experiment Stations and T. S. Hamilton, Associate Director of the Illinois Agricultural Experiment Station at Urbana, represented Government on the panel; and Victor Conquest of Armour and Company and W. C. Dutton of the Dow Chemical Company represented industry.

At the business session on Tuesday afternoon the following officers were elected for 1955: H. E. O. Heineman, Pet Milk Company, *President*; L. E. Clifcorn, Continental Can Company, *Vice President*; and Norman F. Kennedy, Corn Industries Research Foundation, *Secretary*.

FOOD AND NUTRITION BOARD

The fall meeting of the Food and Nutrition Board was held November 5 and 6 at the Academy-Research Council building in Washington. Progress reports were presented by the Committees on Dietary Allowances, Institutional Feeding, Vitamin E Studies at Elgin State Hospital, Cereals, and on Amino Acids. M. K. Bennett apprised the Board of the current world food situation.

Featured discussions at the meeting included the questionable use of artificial sweeteners in foods and the problem of the public interest in multiple vitamin and mineral preparations. The Honorable Frank B. Berry, Assistant Secretary of Defense (Health and Medical), informed the Board of a new inter-departmental Committee on Nutrition, whose offices have been set up in the National Institutes of Health.

At the dinner meeting Russell Wilder was presented the Joseph Goldberger Award of the American Medical Association.

MODULAR COORDINATION CONFERENCE

The Building Research Institute will conduct a one-day conference on "Modular Coordination—Its Value in Contemporary Building," on December 9, at the Academy-Research Council. Modular measure is a system for basing all construction industry measurements on a 4-inch module. It is estimated from present reports that, if fully used by the industry, it could save \$5

billion a year in costs. The conference has two purposes: an evaluation of present usage of modular measure and an examination of ways by which it may best be used to benefit the industry. Sponsors of the meeting are: American Institute of Architects, The Producers' Council, National Association of Home Builders, American Standards Association, Associated General Contractors of America, U. S. Chamber of Commerce, Association of Collegiate Schools of Architecture, and the Building Research Advisory Board.

INTERNATIONAL ARID LANDS SYMPOSIUM-CONFERENCE

The American Association for the Advancement of Science and its Southwestern and Rocky Mountain Division will be the sponsors of a symposium and conference on arid lands to be held in Albuquerque and Socorro, N. Mex., April 26-May 4, 1955. This symposium and conference will be held in conjunction with the Ninth Session of the International Advisory Committee on Arid Zone Research of Unesco.

The symposium is scheduled for April 26-28 and will be followed by a field trip on April 30 and May 1. Topics selected for discussion at the symposium include: "Variability and Predictability of Water Supply in Arid Regions," "Better Use of Present Resources," "Prospects for Additional Water Sources," and "Better Adaptation of Plants and Animals to Arid Conditions." The conference succeeds the symposium and will last from May 2 to 4. This will be a closed meeting for the symposium participants, the Unesco Advisory Committee on Arid Zone Research, and a small group of invited guests. Scientists from neighboring countries, Europe, and the Middle East will be among the invited participants. The University of New Mexico will serve as the host institution.

The Chairman of the Association's Planning Committee is Gilbert F. White, President of Haverford College. Peter C. Duisberg of the Desert Products Company of El Paso, Tex., is Chairman of the Desert and Arid Zone Committee of the Southwestern and Rocky Mountain Division of the Association.

STAFF APPOINTMENTS

The Advisory Committee on International Technologic Assistance announced the appointment of **Charles S. Piggot** as Director of Staff to conduct a survey of industrial research organizations in India and to advise the Foreign Operations Administration on the selection, distribution, and procurement of scientific equipment. After World War II, Dr. Piggot served as Executive Director of the Committee on Geophysical Sciences of the Joint Research and Development Board, and from 1949 to 1951 he was Science Attache in London.

Sidney Epstein, formerly in the Department of Psychology of the University of Michigan, has been appointed a Research Associate in the Office of Scientific Personnel and assumed his duties on October 26.

The Committee on Disaster Studies announces the appointment of **Charles E. Fritz** as Research Associate for the Committee. Formerly Associate Director of the Disaster Research Project of the National Opinion Research Center in Chicago, Mr. Fritz assumed his duties on November 1.

Estaleta Dale, associated with the Chemical-Biological Coordination Center since 1949, has been appointed Head of the Chemistry Group of the Center. Miss Dale replaces **Harriet A. Geer** who resigned October 1 to become Head of the Central Records Office at Parke, Davis & Company, Detroit, Mich.

The Materials Advisory Board has announced the appointment of three technical consultants to its staff. **E. H. Rose**, formerly with the Coal and Iron Division of United States Steel Company and a specialist in the treatment of ores and the production of metal, is serving as a consultant metallurgist; **J. M. Wilson**, recently retired from the Bell Telephone Laboratories, Inc., has been assigned to assist in a broad study of mica due to his extensive experience in the field of insulation; and **E. V. Bennett**, formerly with the Bethlehem Steel Company and an expert on the application and use of steel mill products, will work on several studies being conducted in this general field.

Robert Burns, a specialist on plastics, has been granted leave from the Bell Telephone Laboratories, Inc., to serve as Executive Secretary of the Materials Advisory Board. Dr. Burns is working with the part of the Board's program that deals with non-metallic materials. **Robert S. Temple**, formerly with the Libby-Owens-Ford Company, has also been appointed to work on non-metallic materials. Mr. Temple is serving the Board as a staff chemist and plastics engineer.

The Division of Physical Sciences announces the appointment of three staff members for the recently organized Systems Evaluation Group. **Victor Lewinson**, formerly with the Mellon Institute in Pittsburgh, received his Ph.D. degree in chemistry from Columbia University in 1950 and spent the next year in postdoctoral research at the California Institute of Technology. **George Contos**, a physical chemist, received his doctorate from Columbia in 1951. He was awarded a research grant by the U. S. Public Health Service to continue his research work at Columbia and is currently

associated with the U. S. Navy Operations Evaluation Group. The third member, **Richard H. Smith**, was formerly professor of aeronautical engineering at the Massachusetts Institute of Technology and has spent the last eight years in Brazil organizing and launching the operation of the Brazilian Polytechnic Institute, the Brazilian Center of Aeronautics, and three large national laboratories.

Edmund C. Rowan, until recently on active naval duty with the staff of the Commander in Chief, U. S. Forces in Europe, has been appointed Assistant to the Director of the Office of International Relations. Mr. Rowan formerly served as an assistant to the Science Adviser of the U. S. Department of State.

Pierpont B. Buck, formerly of the Operations Evaluation Group in the Office of Chief of Naval Operations, has been appointed Senior Analyst of the staff of the Maritime Cargo Transportation Conference. Dr. Buck replaces **R. R. O'Neill** who has returned to the University of California at Los Angeles.

RECORD OF MEETINGS

September

- 1-2 Subcommittee on Toxicology, *Rochester, N. Y.*
- 2 Ad hoc Policy Committee on Artificial Sweeteners, *Rochester, N. Y.*
Ship Structure Committee, Project Advisory Committee 139
- 3 Subcommittee on Beta and Gamma Ray Measurements and Standards, *Chicago, Ill.*
- 6 Committee on Training and Research in Applied Mathematics, *Amsterdam, The Netherlands*
American Institute of Biological Sciences, Governing Board, *Gainesville, Fla.*
- 7 Agricultural Board, Committee on Fats and Oils, *Urbana, Ill.*
- 9 Subcommittee on Food Supply
Subcommittee on Nuclear Constants
Gun Liner Panel, Committee on Reports
Federal Construction Council, Operating Committee
- 10 Maritime Cargo Transportation Conference, Steering Committee

September

- 10 Committee on Toxicology
- 11 Division of Engineering and Industrial Research, Executive Committee
- 12-14 Committee on Geography, Advisory to Office of Naval Research, *New York City and New Haven, Conn.*
- 14 USA National Committee, International Union of Pure and Applied Chemistry, *New York City*
Committee on Foods, *New York City*
Federal Construction Council, Advisory Committee
Subcommittee on Cardiovascular System
- 17 Advisory Committee for the WASHO Road Test, *Sun Valley, Idaho*
- 21 Subcommittee on Experimental Cookery, *Chicago, Ill.*
- 22 Subcommittee on Dairy, Oil, and Fat Products, *Chicago, Ill.*
- 22-23 Symposium on Dry Milk Products, *Chicago, Ill.*

September

- 22-23 Committee on Brucellosis and Lep-
tospirosis
- 23 Committee on Food Protection
Federal Construction Council, Ad-
visory Panel on a Building Ma-
terials Display
- 24 Committee on Development of Sub-
stitutes for Waterfowl Feathers
and Down, *New York City*
- 28 Committee on Sanitary Engineering
and Environment
Subcommittee on Shipment of Ra-
dioactive Substances, *Cambridge,
Mass.*
- Gun Liner Panel
- 28-29 Panel on Titanium Producing Pro-
cesses
- 29 Gun Liner Panel, Sub-panel on Tem-
peratures, Pressures, and Thermal
Stress Relations
- 30 Panel on Lower Extremity Research
and Development

October

- 1 Panel on Upper Extremity Research
and Development
- 1-2 Committee on Drug Addiction and
Narcotics, *Rensselaer, N. Y.*
- 2 Technical Committee on Prosthetics
- 3 Agricultural Board
- 4-5 Committee on Preservation of In-
digenous Strains of Maize
- Agricultural Research Institute
- 6 Panel on Sterilization of Blood and
Plasma
- Federal Construction Council, Op-
erating Committee
- 8 Subcommittee on Shock and Panel
on Plasma, Joint Meeting
Committee on Effects of Military
Aircraft on Airfield Pavements
- 9 USA National Committee, Interna-
tional Union Against Cancer
- 10 National Academy of Sciences—Na-
tional Research Council, Govern-
ing Board
- 11 Division of Earth Sciences, Execu-
tive Committee
Committee for Conference on Plas-
tics in Building
- 12-13 Panel on Titanium-Producing Pro-
cesses
- 13-14 Highway Research Board, Depart-
ment of Economics, Finance, and
Administration
- 15 Committee on Naval Medical Re-
search
- 16 Committee on Soil-Calcium Chloride
Roads, *Blowing Rock, N. C.*
Ad hoc Subcommittee to Evaluate
the Armed Forces Food Research
and Development Program, *Cam-
bridge, Mass.*
- 18 Committee on Purity of Chemical
Products

October

- 18 Subcommittee on the Cutaneous
System
Committee on Growth, Executive
Committee, *New York City*
- 18-20 Conference on Electrical Insulation,
Pocono Manor, Pa.
- 19 Panel on Rubber
Building Research Institute, Com-
mittee on Merchantable Construc-
tion
- 20 Bio-Sciences Information Exchange,
Governing Board
- 21 Subcommittee on Biochemistry
Subcommittee on Biology
Subcommittee on Clinical Investiga-
tion
Subcommittee on Etiology and Path-
ology
Subcommittee on Food Technology
Subcommittee on Toxicology
Panel on Lithium
Committee on Dentistry
Committee on Food Protection
Committee on International Ex-
change of Persons
Subcommittee on Nuclear Geophys-
ics
Subcommittee on Radiobiology
- 22-23 Subcommittee on Penetration of
Charged Particles in Matter, *Ith-
aca, N. Y.*
- 25 Committee on Cancer Diagnosis and
Therapy
Subcommittee on Animal Products,
Chicago, Ill.
- 25-26 Armed Forces—National Research
Council Committee on Hearing
and Bio-Acoustics, *Chicago, Ill.*
- 26 Nuclear Data Group Seminar
Subcommittee on Vector Control,
Panel on Vectors of Disease, and
U. S. Army Committee on Insect
and Rodent Control, Joint Meet-
ing, *Edgewood, Md.*
- 26-27 Committee on Army Medical Educa-
tion
- 26-29 Third National Conference on Clay
Minerals, *Houston, Tex.*
- 27-28 Conference on Plastics in Building
- 28 Conference on Enzymatic Debride-
ment Agents
Committee on Fabrics for Body Ar-
mor, *Natick, Mass.*
Ship Structure Committee, Project
Advisory Committee 135
Subcommittee on Trauma
Subcommittee on Shelter and Cloth-
ing
Committee on Atomic Casualties
American Geological Institute, Board
of Directors, *Los Angeles, Calif.*
American Geological Institute, Ex-
ecutive Committee, *Los Angeles,
Calif.*

NEW PUBLICATIONS

- Deterioration of Materials, Causes and Preventive Techniques.* Edited by Glenn A. Greathouse and Carl J. Wessel. Reinhold Publishing Corp., 1954. 835 p. \$12.00.
- Digest of Literature on Dielectrics. Vol. XVII.* 1953. Academy-Council Publication No. 330. 1954. 177 p. \$3.00.
- Food Protection Committee.* [Organization leaflet.] National Research Council. 1954.
- Handbook of Laboratory Animals.* Academy-Council Publication No. 317. 1954. 77 p. \$1.25.
- Human Limbs and Their Substitutes, Presenting Results of Engineering and Medical Studies of the Human Extremities and Application of the Data to the Design and Fitting of Artificial Limbs and to the Care and Training of Amputees.* Paul E. Klopsteg and Philip D. Wilson. McGraw-Hill Book Company, Inc., 1954. 844 p. \$12.00.
- Low Temperature Test Methods and Standards for Containers.* A symposium sponsored by the Quartermaster Food and Container Institute for the Armed Forces Quartermaster Research and Development Command. U. S. Army Quartermaster Corps. Palmer House, Chicago. December 10, 1953. 126 p. (Available from Quartermaster Food and Container Institute for the Armed Forces, Chicago)
- Night Visibility.* Highway Research Board Bulletin 89. Academy-Council Publication No. 323. 1954. 75 p. \$1.05.
- Pregnancy Wastage.* Proceedings of a conference sponsored by the Committee on Human Reproduction, National Research Council in behalf of the National Committee on Maternal Health, Inc. Edited by Earl T. Engle. Charles C Thomas, 1953. 254 p.
- Proceedings of the Conference on Nuclear Processes in Geologic Settings.* Co-sponsored by University of Chicago, National Research Council and National Science Foundation. Williams Bay, Wisc., September 21-23, 1953. University of Chicago Press. 82 p.
- Proceedings of the Thirty-Third Annual Meeting 1954.* Highway Research Board. Academy-Council Publication No. 324. 1954. 563 p. \$8.50.
- Symposium on the Laboratory Propagation and Detection of the Agent of Hepatitis.* Academy-Council Publication No. 322. 1954. 115 p. \$1.00.
- Vertical Sand Drains.* Highway Research Board Bulletin 90. Academy-Council Publication No. 326. 1954. 37 p. \$0.60.

Notice of Academy Meetings

NATIONAL ACADEMY OF SCIENCES

Annual Meeting, Washington, D. C., April 25-27, 1955

NATIONAL ACADEMY OF SCIENCES—NATIONAL RESEARCH COUNCIL

Governing Board, Washington, D. C., December 5, 1954

Governing Board, Washington, D. C., February 13, 1955

Governing Board, Washington, D. C., April 24, 1955

Governing Board, Washington, D. C., June 19, 1955

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NATIONAL RESEARCH COUNCIL

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The search for Truth is in one way hard and in another easy. For it is evident that no one can master it fully nor miss it wholly. But each adds a little to our knowledge of Nature, and from all the facts assembled there arises a certain grandeur.

—ARISTOTLE

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